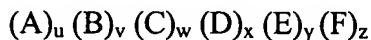


What is claimed is:

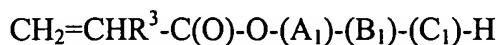
1. A compound comprising a backbone having a formula:



where A is derived from one or more hydroxyl alkyl (meth)acrylate, B is derived from one or more hydroxy polyalkyleneoxide (meth)acrylate, C is derived from one or more alkyl(meth)acrylate, D is derived from one or more (meth)acrylic acid, E is derived from one or more vinyl aromatic monomer, nitrogen containing compound or thio-analog of a nitrogen containing compound, silicon containing monomer, substituted ethylene monomer, or cyclic olefin monomer, and F is derived from one or more hydroxy poly opened-ring lactone polyalkylene oxide (meth)acrylate, where u, v, w, x, y and z are weight percentages of the monomers in the backbone, where u is 0 to 30%, v is 0 to 30%, w is 5 to 70%, x is 5 to 40%, y is 0 to 20% and z is 0 to 30% with the proviso that at least one or u, v or z is greater than 0, and at least one or A, B, C, D, E and F has at least one pendent functional group.

2. The compound of claim 1, wherein the substituted alkyl (meth)acrylate comprises hydroxyalkyl (meth)acrylate monomers where the substituted alkyl group is a branched or unbranched (C₂-C₆)alkyl.
3. The compound to claim 2, wherein the hydroxyalkyl (meth)acrylate monomer is 2-hydroxyalkyl (meth)acrylate, 2-hydroxyethyl acrylate, 2-hydroxypropyl methacrylate, 1-methyl-2-hydroxyethyl methacrylate, 2-hydroxypropyl acrylate, 1-methyl-2-hydroxyethyl acrylate, 2-hydroxybutyl methacrylate, or 2-hydroxybutyl acrylate.
4. The compound of claim 3, wherein the hydroxyalkyl (meth)acrylates have a degree of polymerization of from 1 to 20.
5. The compound of claim 1, wherein the alkyl group has from 1 to 24 carbon atoms.
6. The compound of claim 1, wherein the pendent functional group is derived from a compound that reacts with a hydroxyl group or amine group on the backbone of the copolymer to form a bond, the pendent functional group comprises at least one α,β-ethylenically or acetylenically unsaturated moiety.

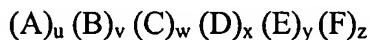
7. The compound of claim 6, wherein the pendent functional group is derived from monoisocyanates, diisocyanates, triisocyanates, polyisocyanates, or mixtures thereof.
8. The compound of claim 7, wherein the diisocyanates, triisocyanates or polyisocyanates are bonded through a free isocyanate group to a free hydroxyl group of a compound having a formula:



wherein R³ is hydrogen or methyl, (A₁), (B₁) and (C₁) are in any order, (A₁) is a chain formed of from 1 to 40 alkoxylate monomers, aromatic-substituted alkoxylate monomers having from 1 to 20 carbon atoms, or mixtures thereof, (B₁) is either absent or is a chain formed of from 1 to 40 alkoxylate monomers, or aromatic-substituted alkoxylate monomers having from 1 to 20 carbon atoms, or mixtures thereof, and the monomer composition of (B₁) being different than the monomer composition of (A₁), and (C₁) is a chain formed of from 1 to 40 open-ring lactone monomers having from 2 to 21 carbon atoms.

9. A photopolymerizable composition comprising:

- a) a polymeric binder having a formula:



where A is derived from one or more hydroxyl substituted alkyl (meth)acrylate, B is derived from one or more hydroxy polyalkyleneoxide (meth)acrylate, C is derived from one or more alkyl (meth)acrylate, D is derived from one or more (meth)acrylic acid, E is derived from one or more vinyl aromatic monomer, nitrogen containing compound or thio-analog of a nitrogen containing compound, silicon containing monomer, substituted ethylene monomer, or cyclic olefin monomer, and F is derived from one or more hydroxy poly opened-ring lactone polyalkylene oxide (meth)acrylate where u, v, w, x, y and z are weight percentages of the monomers in the backbone, where u is 0 to 30%, v is 0 to 30%, w is 5 to 70%, x is 5 to 40%, y is 0 to 20% and z is 0 to 30% with the proviso that at least one of u, v or z is greater than 0, and at least one of A, B, C, D, E and F has at least one pendent functional group; and

- b) one or more photoinitiators.

10. The photopolymerizable composition of claim 9, wherein the hydroxyl substituted alkyl (meth)acrylates are branched or unbranched hydroxy(C₂-C₆) alkyl (meth)acrylates.

11. The photopolymerizable composition of claim 9, wherein the functional pendent group has one or more α,β-ethylenically or acetylenically unsaturated group.

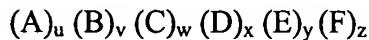
12. The photopolymerizable composition of claim 11, wherein the functional pendent group having the one or more α,β-ethylenically or acetylenically unsaturated group is derived from a monoisocyanate, diisocyanate, triisocyanate, or polyisocyanate.

13. The photopolymerization composition of claim 9, further comprising cross-linking agents, plasticizers, fillers, rheology agents, stripping agents, dyes, stabilizers, or mixtures thereof.

14. A method of imaging comprising:

a) providing a photopolymerizable composition comprising:

1) a compound having a formula:



where A is derived from one or more hydroxy substituted alkyl (meth)acrylate, B is derived from one or more hydroxy polyalkylene oxide (meth)acrylate, C is derived from one or more alkyl (meth)acrylate, D is derived from one or more (meth)acrylic acid, E is derived from one or more vinyl aromatic monomer, nitrogen containing compound, silicon containing monomer, substituted ethylene monomer, or cyclic olefin monomer, or thio-analog of a nitrogen containing compound, and F is one or more poly opened-ring lactone polyalkylene oxide (meth)acrylate, where u, v, w , x, y and z are weight percentages of the monomers in the backbone, where u is 0 to 30%, v is 0 to 30%, w is 5 to 70%, x is 5 to 40%, y is 0 to 20% and z is 0 to 30% with the proviso that at least one of u, v or z is greater than 0, and at least one of A,B,C, D, E and F has at least one pendent functional group, and

2) one or more photoinitiators;

b) applying the photopolymerizable composition to a substrate;

c) imagewise exposing the photopolymerizable composition to actinic radiation to form a polymerized composition; and

d) developing the imagewise exposed photopolymerized composition to form an image on the substrate.

15. The method of claim 14, further comprising a step of etching away metal on the substrate exposed during developing.

16. The method of claim 15, further comprising the step of stripping away the photopolymerized composition from the developed and etched board to form a printed circuit board.

17. The method of claim 16, wherein the metal on the substrate comprises copper, copper alloy, nickel, gold, platinum, silver, tin, zinc, or palladium.